Schwarz-1, Henry

From: Palmer, Michael J [michael.j.palmer@usago.ksc.nasa.gov]
Sent: Monday, January 13, 2003 11:01 AM
To: Frazer, John W.; Beil, Robert J ; Douglas, Tamara A ; Sterritt, John M; Wells, Thomas F; Hall, Elhanon W; Cosgrove, G Michael
Subject: FW:

Follow Up Flag: Follow up
Flag Status: Flagged

ITEM 1

Jim adjusted the format to match the L-1 guidlines. See page 7.

-----Original Message-----
From: Coyne, James M
Sent: Monday, January 13, 2003 10:57 AM
To: Palmer, Michael J
Subject:

STS-107 S0017 L-1 Final.ppt

USAGO Shuttle Engineering

Kennedy Space Center, Florida

STS-107 / OV-102 / FLT 28
L-1 Day Crew Briefing (S0007)

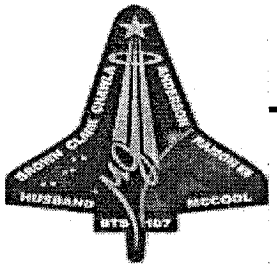
System / Presenter

INTG: Jim Coyne
NASA: Greg Breznik

The purpose of this briefing is to provide the STS-107 Flight Crew with a summary of the OV-102 Test Engineering items that have occurred since completion of the S0017 L-1 day Briefing. Because this package is intended specifically for the Flight Crew, only those items which were thought to be of interest to the crew are included. All questions concerning this briefing should be coordinated through the Vehicle Integration Test Team (VITT) and the USA Test Project Engineering office/NASA Project Engineering offices.

Jim Coyne
USA Test Project Engineer
OV-102

Greg Breznik
NASA Orbiter Project Engineer
OV-102



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INTG: Jim Coyne
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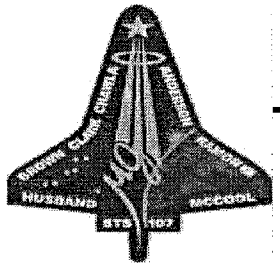
SYSTEM REPRESENTATIVES (* DENOTES SYSTEMS WHO WILL MAKE PRESENTATIONS)

	SYSTEM	USA	NASA
*	INTEGRATION (TPE)	Jim Coyne	Greg Breznik
	PAYLOADS	John Graves	Mike Bruder
	APU	Jason Bachelor	Al Garces
	COMM	Amir Helmy	Scott Thurston
	DPS	Roy Uyematsu	Bob Panzak
	ECLSS	Tim Saunders	Harry Johnson
	EFC	Dan Biechler	Al Menendez
	EMU	Kristine Wilson	Greg Breznik
	EPDC	David Watts	Hung Nguyen
*	FLIGHT CREW SYSTEMS	Kevin Cunningham	Brad Poffenberger
	FLIGHT SOFTWARE	Paul Rahnefeld	Steve Livermore
	FUEL CELLS/PRSD	Tom Mears	Mike Squire
	G&N	Steve Pancoast	Al Menendez
*	HYD	Steve Seberger	Andreas Dibbern
	INST	Russ Heinbockel	Bill Fuerman
	MEQ	Beth Kline	Les Boatright



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SYSTEM REPRESENTATIVES (* DENOTES SYSTEMS WHO WILL MAKE PRESENTATIONS)

	SYSTEM	USA	NASA
*	MPS	Mike Palmer	Tammy Alexander
	NAV / KuBAND	Dave Mickler	Peter Aragona
	OMS/RCS	Steve Barnhardt	Johnny Nguyen
	ORBITER ENGINEERING	Steve Anderson	Greg Breznik
	PAYLOAD TEST	Cedric Perry	James Minnear
	PVD	Susan Hunt	Pete Rosado
	PYRO	Mike Palmer	Steve Townsend
	RMS	Rick Cohen	Al Diaz
	ROCKETDYNE	Mike Cosgrove	Tammy Alexander
	RSS	Craig Chesko	Jim Silviano
	SRE	Jim Glass	Jim Silviano
	SSME	E.W. Hall	Tammy Alexander
	SSMEC	John McClelland	Brian Luther
	STR	Jeff Lembeck	Rob Summers
	TCS	Manny Falero	Joy Huff
	TPS	Bill Bailey	Jennifer Gill

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MLP 2 / PAD 39A

ET-93

FLT S/W VERSION
PASS: OI-29

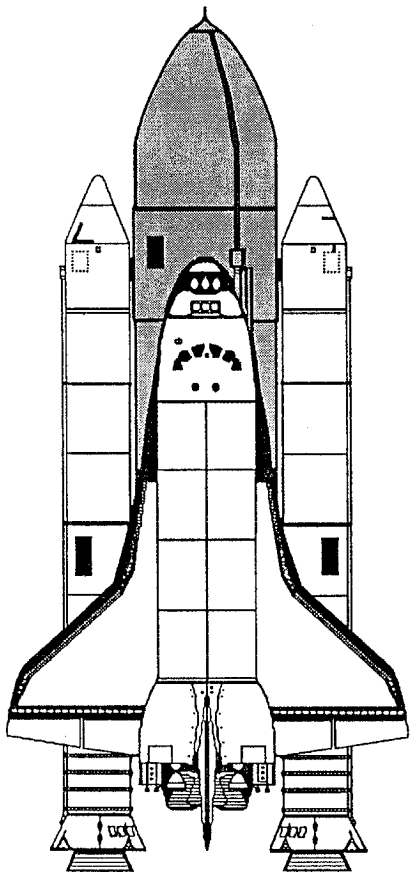
SRB: BIO-116
RSRM: 88

OMS/RCS LOAD INFO

	FUEL	OXID
LOMS	3274 lbs (67.4%)	5450 lbs (67.7%)
ROMS	3284 lbs (67.6%)	5450 lbs (67.7%)
LRCS*	962 lbs (100.6%)	1523 lbs (100.4%)
RRCS*	962 lbs (100.6%)	1523 lbs (100.4%)
FRCS*	824 lbs (80.7%)	1355 lbs (83.6%)

*Includes Manifold Quantities

FRC2: FLT 28
LP05: FLT 17
RP05: FLT 16



TACAN 1: GOULD
TACAN 2: GOULD
TACAN 3: GOULD

NO RMS

2 EMUs
Internal Airlock

FUEL CELL	RUN TIME (HRS) STACK	REG
FC 1, s/n 117	1709	342
FC 2, s/n 111	1419	1419
FC 3, s/n 103	1702	342

(OPERATIONAL LIFE - 2700 HRS)
PRSD TANK SETS: 9

SSME	FLT	LAST FLOWN
1 - 2055-2	1	SSC
2 - 2053-2	5	STS-109
3 - 2049-2	7	STS-108

STS-107 / FLT 28 INTEGRATED STACK

STS-107 / OV-102 / FLT 28
L-1 Day Crew Briefing (S0007)

System / Presenter
TPE: Jim Coyne
NASA: Greg Breznik

"Off-Nominal" Cockpit Indications for OV-102/flight 28

This is a chart listing all known or possible OV-102 meter, switch, LRU or display irregularities that the crew may see during the flight. All are caused by deferred hardware problems, operating system peculiarities or by Unexplained Anomalies picked up on this or previous flows.

DESCRIPTION	COCKPIT LOCATION/INDICATION	CAUSE
APU #2 Ready-to-Start TB may go from GRAY to B/P if WSB #2 steam vent temp decreases below 130 degf. No Crew action is required.	Panel R2	**Deferred hardware problem:** Heater performance has been marginal.
ROMS Fuel tank quantity will not indicate less than 43%. No Crew action is required.	Panel O3	**Deferred hardware problem:** Failed aft quantity gauging probe. Ground to determine actual quantity.
-Y star Tracker will indicate Pressure fail due to a known leakage problem. No crew action is required.	SPEC 22	**Deferred hardware problem:** On-orbit performance will not be affected.
C&W parameter select pushbutton rotary switch plunger may hesitate or bind. Crew action may be required to pull up plunger.	Panel R13	**Known hardware funny**

DISPOSITION OF STS-109 IN-FLIGHT ANOMALIES

None

SIGNIFICANT SYSTEM MODIFICATIONS

None

SIGNIFICANT PROBLEMS/DEFERRALS/UNEXPLAINED ANOMALIES

None

MISCELLANEOUS SYSTEM ITEMS

While installing the airlock ceiling bag it was discovered that there was only 1 inch clearance between the bag and the helmet installed on the port EMU (EV2). This was resolved by moving the clothing bags for MS #1 and MS #3 from the airlock ceiling bag to Volume F.

STS-107 / OV-102 / FLT 28
L-1 Day Crew Briefing (S0007)

System / Presenter
SYS: Michael Palmer
NASA: Tamara Alexander

DISPOSITION OF STS-109 IN-FLIGHT ANOMALIES

None

SIGNIFICANT PROBLEMS / DEFERRALS/ UNEXPLAINED ANOMALIES THIS FLOW

Problem: A crack was found in the ball of the OV-103 LO_2 17 inch feedline manifold end ball-strut-tie-rod assembly (BSTRA)

Cause: Sub-surface defects generating cracks under flight loads and cryogenic conditions.

Resolution: This same inspection was performed on OV102 prior to last flight (STS-109) while the vehicle was at Palmdale and no anomalies were noted. As a result of this cracked ball, all BSTRA joints on OV103, OV104 and OV105 have been inspected. No other cracks in the fleet have been observed. Design has performed testing to better understand the properties of the materials involved. Testing included subjecting BSTRA balls to cryogenic conditions and applying a load, resulting in shallow cracks developing in several test subjects. Once the cracks formed, they did not increase in length as a result of additional cryo & load cycles. Tooling has been developed to manipulate the BSTRA balls on the orbiter and the cracked ball on OV103 has been completely inspected visually. The crack in the OV103 BSTRA ball is similar to the cracks in the test subjects. Based on Boeing design and NASA analysis, OV102, OV104 and OV105 have been approved for one flight.

Impact: Particulate generated as a result of crack formation. Analysis was performed by Rocketdyne and it was determined that particulate of the size generated during testing could readily be ingested by the SSME and would not be a concern.

MISCELLANEOUS

None

BACKUP CHARTS

USAGO Shuttle Engineering

Kennedy Space Center, Florida

STS-107 / OV-102 / FLT 28
L-1 Day Crew Briefing (S0007)

System / Presenter

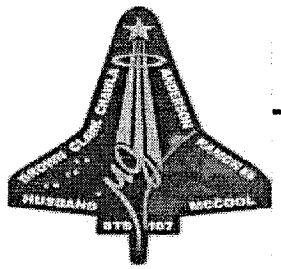
FLT S/W: Steve Velligan
NASA: Steve Livermore

Expected Flight Software Alerts and Messages after Crew Ingress

MMU: Flight Software is OI29 PASS FSW version is 38.01 BFS FSW version is 38.24.B.10 MEDS: IDP S/W Version = 03.01 MDU S/W Version = 04.00

T-TIME	ALERT/MSG	CAUSE OF MESSAGE	CLASS	DETECTED BY: PFS	DETECTED BY: BFS	SEEN DURING: TCDT	SEEN DURING: LCD
T-1H 20 Min	SM1 CABIN PRESS	Any or all of these messages can be triggered due to the varying pressure in the crew compartment during the cabin leak checks.	2		X		X
	SM1 CABIN FAN		2		X		X
	SM1 CABIN PP02		2		X		X
	SM1 CABIN IMU		3		X		X
	SM2 AV BAY FAN		3		X		X
T-20 Min Hold	S62 BCE BYP PSP1	PSP 1 will be powered down for launch during the T-20 minute hold.	3	X			X
T-19 Min (PASS OPS 1 transition)	GNC GRD CK ENA	GNC Ground C/O is enabled for TCDT.	3	X		X	
	BCE STRG 1/2/3 MLS	All 3 MSBLSs are powered off for launch.	3	X		X	X
	F/L/R RCS PVT	The OMS/RCS prop tanks are not at flight pressures for TCDT. The lower pressure causes the PVT and quantity calculations to be outside flight S/W limits.	3	X		X	
	L/R OMS QTY		3	X		X	
T-18 Min (BFS to Run)	206 PL CL 2	Both CL2 and CL3 alarms will occur if Spacehab is powered down for TCDT. Spacehab will be powered up for flight.	2		X	X	
	206 PL CL 3		3		X	X	
T-17 Min (BFS OPS 1 transition)	BCE STRG 1 NSP	NSP 1 is powered off for launch.	3		X	X	X
	SM1 CABIN dp/dt BU	Messages can be triggered if cabin leak checks are continuing.	3		X		X
	SM1 CABIN dp/dt EQ		3		X		X
	F/L/R RCS TK P	OMS/RCS prop tanks not at flight pressures for TCDT.	2		X	X	
	L/R OMS TK P		2/3		X	X	
	MPS PNEU P TK	The MPS pneumatic configuration for TCDT is different than that for flight .	3		X	X	
	MPS PNEU P REG		3		X	X	
	MPS PNEU P ACCUM		3		X	X	
	MPS HE P C/L/R		3		X	X	

United Space Alliance



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Major LRU's replaced due to failure or equipment upgrade during flow 28 processing

System	Component	Reason for Removal & Replacement
COM	Airlock ATU	Low audio during ICOM testing
	Tacan #2	Test status monitor failure
	Comsec #2	Mission key loading problem
	Lexan Covers	CCTV #1 and #2 covers scratched
ECL	AV Bay 4 C/Plate	Coldplate dinged
	IR CO2 sensor	Suspect calibration
EPD	Mid deck F/Light #6	Bulb failure
	F7 Event timer display	Segment burnt out
MEQ	LH & RH ET door PDU's	Low slip torque
	A-Hatch actuator	Faulty actuator
MPS	MPS PD3	Failed to close on-orbit
OMS	LOMS Totalizer	Faulty power supply
STR	Windows #5 & #7	Window damaged

STS-107 / OV-102 / FLT 28
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System / Presenter
OE: Steve Anderson
NASA: Greg Breznik

LOST/NOT FOUND (FORWARD/MID ONLY)

Item: FWD/Strap
Weight: 14.5 grams
Size: 14.5" L x 0.5" W

Item: MID/Backshell tang
Weight: 2 grams
Size: 0.5" L x .4" W

Item: MID/Flashlight pieces (cap, spring, plate)
Weight: 0.6, 0.0, 0.24 grams respectively
Size: 0.24" x 0.02", 0.2" x 0.2", 0.25" x 0.03" respectively

Item: MID/Hinge pin from inspection mirror
Weight: 0.2 grams
Size: 0.1" x 0.2"

Item: MID/14 Blanket buttons
Weight: 0.5 grams/each
Size: .9" diameter/each

No new items since S0017